

AUG. 20. 2008 2:49PM

NO. 1667 P. 3

RECEIVED  
CENTRAL FAX CENTER

AUG 20 2008

PATENT  
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN THE APPLICATION OF:

MIKHAIL R. LEVIT

CASE NO.: HT4020USNA

APPLICATION NO.: 10/826,530

GROUP ART UNIT: 1731

FILED: APRIL 16, 2004

EXAMINER: JOSE A. FORTUNA

FOR: ARAMID PAPER BLEND

APPEAL BRIEF

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

This is a complete Appeal Brief in support of the Appeal to the Board of Patent Appeals and Interferences for the above referenced Patent Application.

Authorization to Charge Deposit Account

Please charge the associated fee of \$330.00 [37 CFR 1.17(f)] to Deposit Account 04-1928 (E. I. du Pont de Nemours and Company). If the fee is insufficient or incorrect, please charge or credit the above-identified Deposit Account.

Real Party in Interest

The real party in interest is E. I. du Pont de Nemours and Company as confirmed by an assignment recorded in the United States Patent and Trademark Office on Reel 014894, frame 0751.

Related Appeals and Interferences

There are no other pending appeals or interferences known to Appellants.

Status of Claims

Rejected claims 1-14 in the above referenced patent application are being appealed and are presented in the attached Appendix.

08/21/2008 VBUI11 00000034 041928 10826530  
02 FC:1402 510.00 DA

AUG. 20. 2008 2:49PM

RECEIVED  
CENTRAL FAX CENTER NO. 1667 P. 4

Application No.: 10/826,530  
Docket No.: HT4020USNA

AUG 20 2008

**Status of Amendments**

No amendments have been filed and entered since the mailing of the final Official Action, dated January 14, 2008.

**Summary of the Claimed Subject Matter**

The claimed subject matter of independent claim 1 is an aramid paper comprising 50 to 95 weight percent p-aramid pulp and 5-50 weight percent of floc with an initial modulus less than 3000 cN/tex (page 3, lines 4-70).

**Grounds of Rejection to be Considered on Appeal**

Whether Claims 1-14 are unpatentable under 35 USC 102(b) as anticipated by or in the alternative under 35 USC 103(a) as obvious over US Patent Application Publication 2002/0142689 to Levit (Levit) or US 5833807 to Ramachandran et al. (Ramachandran)?

**Argument**

Whether Claims 1-14 are unpatentable under 35 USC 102(b) as anticipated by or in the alternative under 35 USC 103(a) as obvious over US Patent Application Publication 2002/0142689 to Levit (Levit) or US 5833807 to Ramachandran et al. (Ramachandran)?

Claims 1-14 are rejected under 35 USC 102(b) as anticipated by or in the alternative under 35 USC 103(a) as obvious over US Patent Application Publication 2002/0142689 to Levit (Levit) or US 5833807 to Ramachandran et al. (Ramachandran). The Examiner has not clearly separated the rejections for anticipation and obviousness, but for convenience the arguments herein are separated.

**Anticipation**

To carry a rejection for anticipation under 35 USC 102, the Examiner must provide a single reference that discloses each and every limitation of the claims in question. Verdegaal Bros. V. Union Oil Co. of California, 814 F2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). As to anticipation, the Examiner apparently argues that both Levit and Ramachandran teach an

Application No.: 10/826,530  
Docket No.: HT4020USNA

aramid paper comprising a p-aramid pulp in amounts falling within the claimed ranges. However Levit discloses a paper made only of floc and moreover with at least 25% of p-aramid floc in the composition. The Examiner has argued that although Levit teaches only floc; the reference at paragraph 005 cites US4698267 to Tokarsky as disclosing p-aramid pulp in combination with para/meta-aramid floc. However, as disclosed at column 2, lines 6-27, Tokarsky does not teach meta-aramid floc, only meta-aramid fibrils. The Examiner further argues that Tokarsky teaches floc having modulus in the range of 203 cN/tex to 8400 cN/tex, which would cover the claimed limitation of less than 3000 cN/tex. However, at column 2, lines 59-68, Tokarsky discloses that the properties of the floc are tensile strength of about 203 cN/tex and tensile modulus of about 8400 cN/tex.

Ramachandran does not disclose any ratio at all between components of different structure (p-aramid pulp and low modulus floc) much less a specific ratio and further does not disclose the claimed tensile modulus of less than 3000 cN/tex.

For these reasons, anticipation has not been shown and the rejection is improper and should be withdrawn.

#### Obviousness

To carry a rejection for obviousness under 35 USC 103, the Examiner must establish a prima facie case of obviousness, the requirements of which are presented in Chapter 2142 Legal Concept of Prima Facie Obviousness in the Manual of Patent Examining Procedure (MPEP). At a minimum, the reference or combined references must teach or suggest all of the claimed limitations, which the Examiner has not demonstrated. The Examiner has maintained that all of the patent references teach that floc is an m-aramid fiber/floc and use the same types of fiber/floc and as such the initial modulus limitation is met or would have been obvious. The Examiner further maintains that all of the references teach the use of a binder and that such binders can be in the form of fibrils. As noted above, the Examiner's arguments and application of the references do not render the claims obvious because none of the references individually or combined teach every limitation of the claims.

Application No.: 10/826,530  
Docket No.: HT4020USNA

As noted above with respect to anticipation, Levit does not disclose each of the claimed limitations and neither does Levit suggest all of the claimed limitations to one of ordinary skill in the art. First, Levit discloses a paper made only of floc, not a p-aramid pulp and floc as claimed. Further, Tokarsky does not disclose p-aramid pulp in combination with para/meta-aramid floc, but rather only meta-aramid fibrils - not meta-aramid floc. Also, Tokarsky does not disclose or suggest the claimed tensile modulus of less than 3000 cN/tex, but rather a value of about 8400 cN/tex. Moreover, even the "low-modulus" floc as disclosed at column 3, lines 1-2 of Tokarsky has a modulus of about 4860 cN/tex. These modulus values are significantly higher than the claimed range for the floc, which is below 3000 cN/tex. In the Advisory Action, dated May 5, 2008, the Examiner cites Ex parte Smith, 83 USPQ2d 1509 (Board of Patent Appeal and Interferences, June 25, 2007) with respect to certain "KSR factors" that it is obvious to try by choosing from a finite number of identified predictable solutions with a reasonable expectation of success. The Examiner does not articulate how the claimed composition and modulus would be predictably arrived at from the entirely different composition of Levit under an "obvious to try" situation.

The Examiner admits that Ramachandran does not explicitly disclose the ratio of fibers, but then argues that column 4, lines 3-10 of the reference teaches 5-95% of aramid fibers, which includes at least one of aramid fibers or aramid floc. The Examiner also offers the same passage as teaching that the amount of fibers can be selected to be convenient and to afford optimized dispersion. The Examiner then uses this disclosure from Ramachandran as an indication that proportion of fibers to floc can be optimized to desired requirements and cites In re Antonie and In re Aller that the discovery of an optimum value of a result effective variable is ordinarily within the skill of the art. It should first be noted that the cases state that such discovery is ordinarily (not necessarily) within the skill of the art. Moreover, these cases are primarily directed to processes where a variable such as temperature is at issue. As noted in In re Aller, 105 USPQ at 235, the general conditions of the claims are disclosed in the prior art. That is not the case here. Ramachandran not only does not disclose or suggest any ratio of floc and

Application No.: 10/826,530  
Docket No.: HT4020USNA

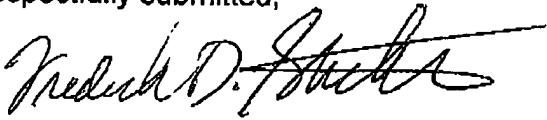
pulp; it does not even disclose or suggest a combination of paramid pulp with floc having a modulus below 3000 cN/tex. Further, column 4, lines 3-10 of Ramachandran only speaks to the concentration of fiber as it relates to dispersion in view of the pH range (see column 3, lines 52-58).

For these reasons, a prima facie case of obviousness has not been shown and the rejection is improper and should be withdrawn.

**Conclusion**

The Board of Patent Appeals and Interferences is respectfully requested to reverse the final rejection so that the subject application would be allowable.

Respectfully submitted,



Frederick D. Strickland  
Attorney for Applicant  
Registration No. 39,041

Dated: August 20, 2008

Application No.: 10/826,530  
Docket No.: HT4020USNA

**CLAIMS APPENDIX**

1. Aramid paper comprising 50 to 95 weight percent p-aramid pulp and 5-50 weight percent of floc with an initial modulus less than 3000 cN/tex.
2. The aramid paper of claim 1, wherein p-aramid pulp is poly (p-phenylene terephthalamide) pulp.
3. The aramid paper of claim 1, wherein the floc is meta-aramid.
4. The aramid paper of claim 3, wherein the meta-aramid floc is poly (m-phenylene isophthalamide) floc.
5. The aramid paper of claim 1, comprising a polymer binder material in the quantity of less than 20 weight percent based on the weight of the total composition.
6. The aramid paper of claim 5, wherein at least a portion of the polymer binder material is in the form of fibrils.
7. The aramid paper of claim 6, wherein the fibrils are made from poly (m-phenylene isophthalamide).
8. The aramid paper of claim 5, wherein the polymer binder can be fused by one of the group consisting of drying and calendering.
9. The aramid paper of claim 5, wherein at least a portion of the polymer binder material is a resin binder material, which can be fused during drying or calendering of the paper.
10. The aramid paper of claim 9, wherein at least a portion of the resin binder material is thermoplastic floc.
11. The aramid paper of claim 9, wherein at least a portion of the resin binder material is a water-soluble resin.
12. The aramid paper of claim 1, wherein the basis weight of the paper is less than 70 g/m<sup>2</sup>.
13. The aramid paper of claim 1 or 5, wherein the absolute value of the coefficient of thermal expansion of the paper in plane in the temperature interval between 20 and 100°C is less than 4 ppm/C.
14. The aramid paper of claim 1 or 5, comprising 70 to 95 weight percent p-aramid pulp.

Application No.: 10/826,530  
Docket No.: HT4020USNA

15. A printed wiring board, comprising one or more layers of the paper of claim 1 or 5.
16. An electrical insulating material, comprising one or more layers of the paper of claim 1 or 5.
17. A composite structure, comprising the aramid paper of claim 1 or 5 impregnated with a resin.
18. The composite structure of claim 17, wherein the resin is a phenol.
19. A printed wiring board or electrical insulating material, comprising the composite structure of claim 17.
20. A structural material, comprising the aramid paper of claim 1 or 5.
21. The structural material of claim 20, wherein the aramid paper is incorporated into the cells of a honeycomb structure.
22. The structural material of claim 20, wherein the aramid paper is incorporated into the facing of a sandwich panel.
23. A process of making aramid paper, comprising the steps of dispersing p-aramid pulp in water, blending the pulp/water slurry with a floc having an initial modulus less than 3000 cN/tex wherein the weight percent of the pulp and the floc in the solids is from 50 to 95 and from 5 to 50 respectively, draining the water from the final slurry to yield a wet paper composition, drying the wet paper composition.
24. The process of claim 23, comprising a step of wet pressing of the wet paper composition before drying.
25. The process of claim 24, comprising heat-treating the paper after drying.
26. The process of claim 23, comprising a step of adding a polymer binder material in a quantity less than 20 weight percent of the total solids after blending the pulp/water slurry with the floc.
27. The process of claim 26, comprising heat-treating the paper after drying.
28. The process of claim 23, comprising densification of the dried paper.

Application No.: 10/826,530  
Docket No.: HT4020USNA

29. The process of claim 28, wherein densification is performed by selecting one of the group consisting of application of pressure in the nip of a calender and application of pressure in a press.
30. The process of claim 28, comprising a step of heat-treating the paper after densification.

AUG. 20. 2008 2:50PM

NO. 1667 P. 11

Application No.: 10/826,530  
Docket No.: HT4020USNA

**EVIDENCE APPENDIX**

**None**

Application No.: 10/826,530  
Docket No.: HT4020USNA

**RELATED PROCEEDINGS APPENDIX**

**None**